Time Critical Diagnosis—Stroke and STEMI System Implementation

GENERAL STROKE INTER-FACILITY TRANSFER PROTOCOL-NON tPA

For Discussion 5/12/09

- Do not delay transport.
- Time last known well/normal
- Neuro exam (signs/symptoms)
- CT – bleed? yes/no
- ABC's (follow Airway/Oxygenation Protocol).
- (add EMT protocol)

- Time transportation was called
- Type of transport (air/ambulance)
- Lab results (glucose) – draw/run
- Exclusions/Inclusions
- Communication - Receiving hospital notified, transfer accepted?
- Strict NPO
- Obtain vital signs
- Copy of records/films, medication list
- Blood pressure management guidelines
- No ASA or Heparin
- Antiemetic
- Contact info
- Current medications
    - Rate
- Preferably 2 #18 IV lines or access
    - AC
    - NS
- Protocol guidelines for neurological deterioration en route

Time Critical Diagnosis—Stroke and STEMI System Implementation

STROKE LEVEL 2 INTER-FACILITY TRANSFER PROTOCOL- NON tPA

For Discussion 5/12/09

EMS protocol

1. ABC's (follow Airway/Oxygenation Protocol). Maintain oxygen saturation at a minimum of 93%. If oxygen saturation falls below 93%, administer low flow oxygen at 2-4 LPM. Do not routinely administer high flow oxygen to stroke patients. If the patient has shortness of breath, oxygen saturation below 92%, or decreased level of consciousness, increase oxygen as needed.
2. Obtain blood glucose level. Treat only if less than 50 mg/dl.
3. Obtain vital signs including 12-lead ECG and a brief history (last time seen normal or without symptoms). Make sure to get a phone number where someone knowledgeable of the patient's current condition and health history can be contacted immediately (preferably a cell phone).
4. Perform a basic stroke exam.
5. Do not delay transport. Determine if patient should be transported by ground or air.

Aren't these things done by the transferring hospital prior to transfer and does EMS need to repeat then en route?

NOTE: *Follow regional plan for your area. If symptom onset is less than 2 hours transport to nearest Level I center.*

2. Time stamps

1. Last known well (normal)
2. Arrival time
3. CT (when completed and when read/reviewed)

3. Bleed/No bleed

Need CT

4. **Documentation of exclusion.** [If no exclusion, FDA-approved stroke thrombolytic administered – use tPA protocol].

Establish communication with receiving hospital

1. Contact receiving facility and notify of suspected or confirmed stroke patient as soon as possible.
2. Establish 2 PIVs (preferably 18ga AC)

3. Perform an expanded stroke exam if time and patient condition will allow (regional recommendation).

   Aren't these things done by the transferring hospital prior to transfer and does EMS need to repeat them en route?

4. Do not treat hypertension without specific approval from the receiving facility

   Should EMS have a protocol for HTN following national guidelines for HTN/stroke and HTN/t-PA or should they get direction from medical control?

5. Patient should be transported with head flat, unless risk of aspiration is present or hemorrhagic stroke.
6. Patient handoff to receiving facility should include:
   - Patient assessment and condition upon arrival, including time of onset;
   - Care provided;
   - Changes in condition following treatment and specific immediate family contact information.
7. No anti-platelets, no anti-coagulants

Time Critical Diagnosis—Stroke and STEMI System Implementation

STROKE LEVEL 2 INTER-FACILITY TRANSFER PROTOCOL- tPA

(FDA approved stroke lytics)

For Discussion 5/12/09

Patient Care Communication Hand-off

1. Make sure to get a phone number where someone knowledgeable of the patient's current condition and health history can be contacted immediately (preferably a cell phone).
2. Time Stamps/documentation
3. Ongoing orders
4. Contact information for sending and receiving facilities (sending/receiving report/accepting physician)
5. Specific location destination (room, department)

Time stamps

1. Last known well (normal)
2. Arrival time
3. CT (when completed and when read/reviewed)
4. Document and review with transport team: lytics bolus, infusion, and expected completion time (determine tPA protocol/tool kit).
5. Documentation of every 15 minute neuro checks and vital signs.

⇨ **END POINT**

If condition deteriorating, contact receiving hospital for medical control and discontinue lytics

1. Contact receiving facility and notify of suspected or confirmed stroke patient as soon as possible.

   Shouldn't this be done prior to transport by hospital when transfer arranged or does EMS need to repeat it en route?

2. Establish 2 PIVs (preferably 18ga AC) shouldn't this be done by transferring hospital prior to transfer?
3. Perform an expanded stroke exam if time and patient condition will allow (regional recommendation)

   Shouldn't this be done by transferring hospital prior to transport or does EMS need to repeat it en route?

4. Do not treat hypertension without specific approval from the receiving facility.

5. Patient should be transported with head flat, unless risk of aspiration is present or hemorrhagic stroke.
6. Patient handoff to receiving facility should include:
    - Patient assessment and condition upon arrival, including time of onset;
    - Care provided;
    - Changes in condition following treatment and specific immediate family contact information.
7. No anti-platelets, no anti-coagulants.

What it the t-PA protocol for the transferring hospital and EMS en route?

EMS protocol

1. ABC's (follow Airway/Oxygenation Protocol). Maintain oxygen saturation at a minimum of 93%. If oxygen saturation falls below 93%, administer low flow oxygen at 2-4 LPM. Do not routinely administer high flow oxygen to stroke patients. If the patient has shortness of breath, oxygen saturation below 92%, or decreased level of consciousness, increase oxygen as needed.
2. Obtain blood glucose level. Treat only if less than 50 mg/dl.
3. Obtain vital signs including 12-lead ECG and a brief history (last time seen normal or without symptoms). Make sure to get a phone number where someone knowledgeable of the patient's current condition and health history can be contacted immediately (preferably a cell phone).
4. Perform a basic stroke exam.
5. Do not delay transport. Determine if patient should be transported by ground or air.

Aren't these things done by the transferring hospital prior to transfer and does EMS need to repeat them en route?

NOTE: *Follow regional plan for your area. If symptom onset is less than 2 hours transport to nearest Level I or II center.*

5. **Time stamps**
   1. Last known well (normal)
   2. Arrival time
   3. CT (when completed and when read/reviewed)

6. **Bleed/No bleed**

   Need CT

7. **Documentation of exclusion.** [If no exclusion, FDA-approved stroke thrombolytic administered – use tPA protocol].

Establish communication with receiving hospital

1. Contact receiving facility and notify of suspected or confirmed stroke patient as soon as possible.

2. Establish 2 PIVs (preferably 18ga AC)
3. Perform an expanded stroke exam if time and patient condition will allow (regional recommendation).

   Aren't these things done by the transferring hospital prior to transfer and does EMS need to repeat them en route?

4. Do not treat hypertension without specific approval from the receiving facility

   Should EMS have a protocol for HTN following national guidelines for HTN/stroke and HTN/t-PA or should they get direction from medical control?

5. Patient should be transported with head flat, unless risk of aspiration is present or hemorrhagic stroke
6. Patient handoff to receiving facility should include:
   - Patient assessment and condition upon arrival, including time of onset;
   - Care provided;
   - Changes in condition following treatment and specific immediate family contact information.
7. No anti-platelets, no anti-coagulants.

Time Critical Diagnosis—Stroke and STEMI System Implementation

STROKE LEVEL 3 INTER-FACILITY TRANSFER PROTOCOL- tPA
(FDA approved stroke lytics)
For Discussion 5/12/09

EMS protocol

- ABC's (follow Airway/Oxygenation Protocol). Maintain oxygen saturation at a minimum of 93%. If oxygen saturation falls below 93%, administer low flow oxygen at 2-4 LPM. Do not routinely administer high flow oxygen to stroke patients. If the patient has shortness of breath, oxygen saturation below 92%, or decreased level of consciousness, increase oxygen as needed.
- Obtain blood glucose level. Treat only if less than 50 mg/dl.
- Obtain vital signs including 12-lead ECG and a brief history (last time seen normal or without symptoms). Make sure to get a phone number where someone knowledgeable of the patient's current condition and health history can be contacted immediately (preferably a cell phone).
- Perform a basic stroke exam.
- Do not delay transport. Determine if patient should be transported by ground or air.

NOTE: *Follow regional plan for your area. If symptom onset is less than 2 hours transport to nearest Level I or II center.*

Time stamps

1. Last known well (normal)
2. Arrival time
3. CT (when completed and when read/reviewed)
4. Document and review with transport team: lytics bolus, infusion, and expected completion time (determine tPA protocol/tool kit).
5. Documentation of every 15 minute neuro checks and vital signs.

- If condition deteriorating, contact receiving hospital for medical control and discontinue lytics

1. Contact receiving facility and notify of suspected or confirmed stroke patient as soon as possible.
2. Establish 2 PIVs (preferably 18ga AC)
3. Perform an expanded stroke exam if time and patient condition will allow (regional recommendation).
4. Do not treat hypertension without specific approval from the receiving facility

5. Patient should be transported with head flat, unless risk of aspiration is present or hemorrhagic stroke
6. Patient handoff to receiving facility should include:
    - Patient assessment and condition upon arrival, including time of onset;
    - Care provided;
    - Changes in condition following treatment and specific immediate family contact information.
7. No anti-platelets, no anti-coagulants

EMS protocol

1. ABC's (follow Airway/Oxygenation Protocol). Maintain oxygen saturation at a minimum of 93%. If oxygen saturation falls below 93%, administer low flow oxygen at 2-4 LPM. Do not routinely administer high flow oxygen to stroke patients. If the patient has shortness of breath, oxygen saturation below 92%, or decreased level of consciousness, increase oxygen as needed.
2. Obtain blood glucose level. Treat only if less than 50 mg/dl.
3. Obtain vital signs including 12-lead ECG and a brief history (last time seen normal or without symptoms). Make sure to get a phone number where someone knowledgeable of the patient's current condition and health history can be contacted immediately (preferably a cell phone).
4. Perform a basic stroke exam.
5. Do not delay transport. Determine if patient should be transported by ground or air.

NOTE: *Follow regional plan for your area.*

If symptom onset is less than 2 hours, *transport to nearest level I, II or III (treatment needs to start within 3 hours and the hospital will need 1 hour to implement treatment).*
If symptom onset is greater than 2 hours *or less than 12 hours, transport to the highest level stroke center available.*

Time stamps:

1. Last known well (normal)
2. Arrival time

EN ROUTE

1. Contact receiving facility and notify of suspected stroke patient as soon as possible.
2. Establish an IV (follow IV protocol, preferably 18ga right AC)
3. Perform an expanded stroke exam if time and patient condition will allow (regional recommendation).
4. Do not treat hypertension without specific approval from the receiving facility
5. Patient should be transported with head flat, unless risk of aspiration is present
6. Patient handoff at the hospital should include:

- Patient assessment and condition upon arrival, including time of onset;
- Care provided;
- Changes in condition following treatment and specific immediate family contact information.